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MINERAL INVESTIGATION OF THE EAGLE MOUNTAINS WILDERNESS STUDY AREA,
CALIFORNIA DESERT CONSERVATION AREA, RIVERSIDE COUNTY, CALIFORNIA

By
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This open file report summarizes the results of a Bureau of Mines wilderness study and will be incorporated in a joint report with the Geological Survey. The report is preliminary and has not been edited or reviewed for conformity with the Bureau of Mines editorial standards. Work on this study was conducted by personnel from Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

STUDIES RELATED TO WILDERNESS
Bureau of Land Management Wilderness Study Areas

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a mineral survey of the Eagle Mountains Wilderness Study Area (CDCA-334), California Desert Conservation Area, Riverside County, California.

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MINERAL INVESTIGATION OF THE EAGLE MOUNTAINS WILDERNESS STUDY AREA,
CALIFORNIA DESERT CONSERVATION AREA, RIVERSIDE COUNTY, CALIFORNIA

By Robert A. McColly, Bureau of Mines

INTRODUCTION

Field examinations of known mineral deposits and mineralized areas in and near the Eagle Mountains Wilderness Study Area were conducted by Bureau of Mines personnel during December 1981 and in February and September 1982. These studies, which included reconnaissance of all mines, mining claims, prospects, and mineralized areas inside or within a mile of the study area boundary, were made in cooperation with the Geological Survey as part of a joint mineral resource investigation.

During the investigation 33 samples were taken. All were fire-assayed for gold and silver, and additional analyses by appropriate methods were made when minerals containing other metals were seen or suspected. Selected samples were analyzed spectrographically for 42 elements to ensure that anomalous contents of other, unanticipated elements were not overlooked.

The results of all analyses are available for public inspection at the Bureau of Mines, Intermountain Field Operations Center, Denver Federal Center, Denver, Colo. 80225.

Location, size, and geographic setting

The Eagle Mountains Wilderness Study Area is 180 mi east of Los Angeles in east-central Riverside County, Calif., just north of U.S. Highway I-10 (fig. 1). It is approximately 50 mi from either Blythe or Indio, Calif., the two nearest population centers. Small communities near the study area are Desert Center, on I-10, 7 mi southeast, and Eagle Mountain, 3 mi northeast, at the Eagle Mountain Mine.

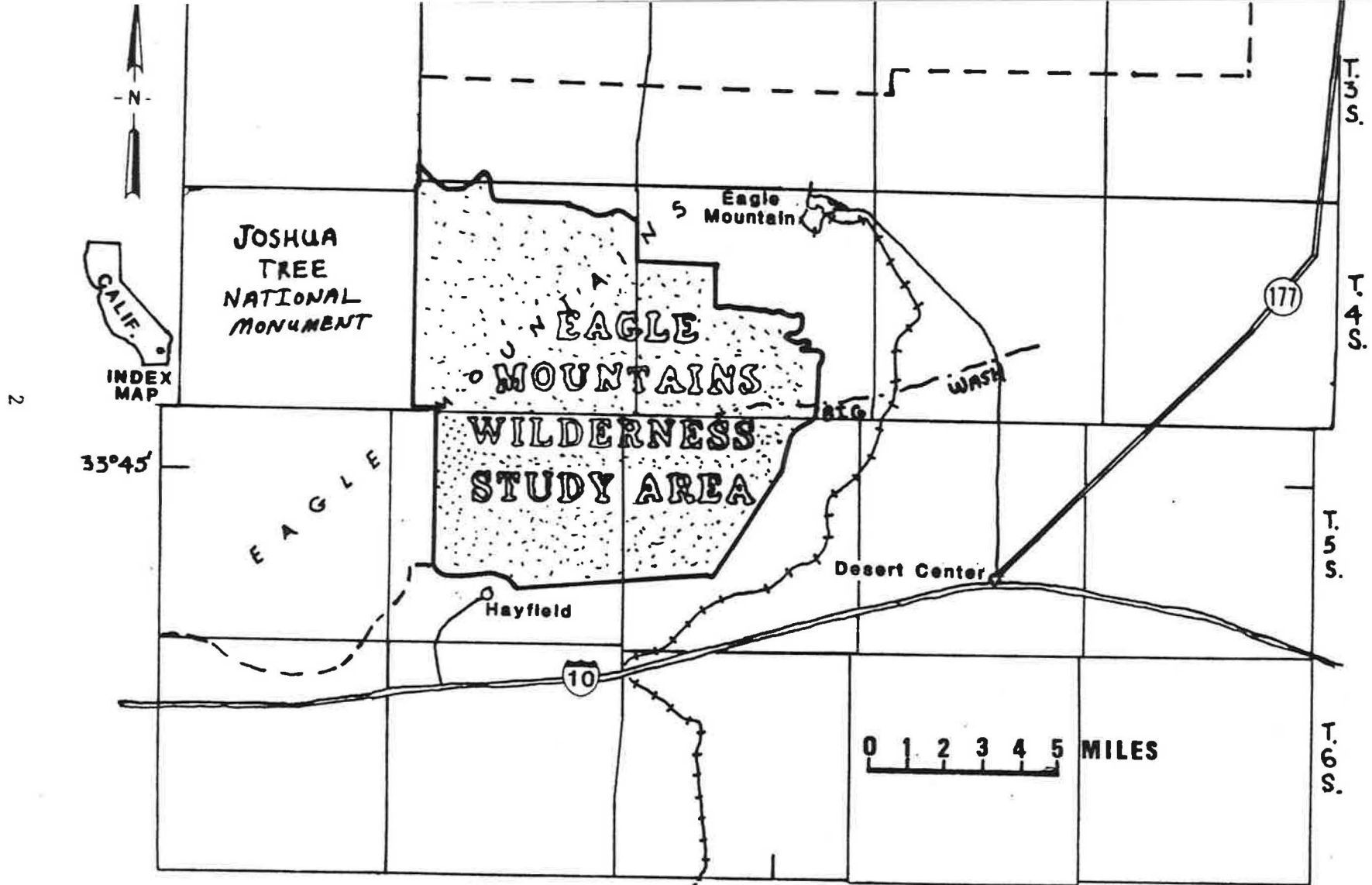


Figure 1.--Index map of the Eagle Mountains Wilderness Study Area, Riverside County, California

The study area covers 49,723 acres in the central and southeastern Eagle Mountains, of which all but about four sections are managed by the Bureau of Land Management. The southwestern Eagle Mountains are within the Joshua Tree National Monument which forms the western boundary of the study area. Beyond the study area's northern boundary is Kaiser Steel Corporation's Eagle Mountain Mine and all other mines in the Eagle Mountains known to have had more than token mineral production.

Unpaved roads and jeep trails provide reasonably complete access to the perimeter of the area, except on the west, where a single unimproved road from the Joshua Tree National Monument visitors center at Cottonwood Springs crosses the study area boundary at Big Wash. This road provides the only access to the 11-mi-long common boundary between the study area and Joshua Tree National Monument. Vehicular access within the study area is confined to the larger washes and to a very few short, mine roads at the northwest and southern edges.

Topographic relief within the study area is about 2,500 ft, lying between 1,400 and 3,900 ft elevations. Except for a few areas of low relief adjacent to some of the larger interior washes, most of the lands are rough and mountainous, characterized by cliffs and steep rocky slopes.

Mining activity

Early mining activity in the Eagle Mountains was chiefly concerned with the prospecting for, and mining of, gold. Both placer and lode gold deposits, mostly small, were being developed by the late 1800's, though some of the gold and iron deposits may have been discovered as early as 1865 (Vredenburg and others, 1981). Roads and scattered mine workings give evidence that these activities included the study area; however, nearly all workings found appeared to be old and abandoned.

Bureau of Land Management records show three mining claims filed within the study area, but no leases or permits for oil, gas, or other minerals have been issued for lands either in or near the area.

Courthouse records indicate that a dozen or so claims were located within the study area in the past, but few of these can be located in the field from their descriptions or matched to existing workings. None of the three claims filed with the Bureau of Land Management for 1981--the Shooting Star No. 1, the Little Storm-Jade Mountain, or the Independence No. 2--was active when visited, or appeared to have been worked recently.

MINING DISTRICTS AND MINERALIZED AREAS

All mines and prospects in the Eagle Mountains are included in the Eagle Mountain mining district, though nearly all of the district mineral production came from properties in the north end of the range outside the study area.

Iron, gold, lead, silver, copper, jade, and roofing granules have been produced in the district. Of these, only gold is known to occur within the study area; however, the deposit mined for roofing granules on the Little Storm-Jade Mountain claim may extend inside the area for a short distance. The material is not exposed, and no attempt has been made to test or develop this possible extension.

Big Wash-Southern Eagle Mountains area

Most of the gold prospects found within the Eagle Mountains Wilderness Study Area are in the southern portion of the Eagle Mountains, and all but the Orofino(?) and Independence prospects are south of Big Wash, a major drainage crossing the study area about 4 mi north of its southern boundary. The Orofino(?) prospects lie just north of Big Wash in the SW1/4 sec. 36, T. 4 S., R. 13 E., and the Independence prospect in secs. 9 and 16, T. 4 S., R. 14 E. on the northern boundary of the study area.

Additional identified prospects are the Golden Eagle, Lucky Dollar, and Shooting Star No. 1 (table 1). An unnamed prospect in unsurveyed sec. 2, T. 5 S., R. 13 E., was found and sampled, and samples were taken in unsurveyed secs. 19 and 20, T. 5 S., R. 13 E., near Hayfield Summit Spring to test a reported anomalous area, but no gold values were found (table 2, samples 31-33).

Golden Eagle Mine

About 1 mi inside the southern boundary, several small and shallow workings explore northeast-striking shear zones in granite over an exposed distance of about 600 ft at the Golden Eagle Mine (pl. 1). At the east end of the exposure, an inclined shaft and an adit, both caved, are near the base of a hill. At the west end, near the hilltop, is the chief working, a 50-ft adit with a stope to the surface. Between the shaft and the adit are several short adits, trenches, open cuts, pits, and dumps.

An ounce of gold from the Golden Eagle Mine reported in 1941 is the only recorded production known within the study area (table 1). The stoped area in the upper adit is the probable source of the gold, as it was the only stope found on the property and gold values were obtained in samples taken at the edges of the stope (table 2, samples 24 and 26). Gold values were apparently too low and erratic to justify continued mining, a conclusion supported by Bureau of Mines' sample values. Of 6 samples, 3 were below the 0.005 oz per ton detection limit for gold. The highest gold value obtained was from a 1.0 ft chip containing 0.236 oz gold per ton (table 2, samples 24-29). No resources can be determined from the available data, but a low-tonnage, low-grade gold resource may be present. As the surface exposures of the shear zones have been well explored, any inferred resource must lie beyond the existing workings.

Shooting Star No. 1 prospect

The highest gold assay obtained during the Bureau of Mines study, 1.034 oz gold per ton, was taken from a narrow, 1- to 4-in. wide, north-striking, vertically dipping vein in granite on the Shooting Star No. 1 claim, in the south-central part of the study area (pl. 1, table 1). Other samples with gold from this property ranged in value from 0.026 to 0.926 oz gold per ton (table 2, samples 15-20). Gold values apparently are confined to the vein, as adjoining wallrock samples assayed below the 0.005 oz per ton detection limit for gold (table 2, samples 21-23). The vein is exposed to a depth of about 25 ft in a vertical shaft, and for about 50 ft along the surface. Exposures of similar structures 150 to 250 ft northeast, may be offset or parallel structures. If, indeed, the same structure, strike lengths of at least 300 ft and vertical exposures of about 80 ft are indicated.

A sample taken from a stockpile containing hand-sorted vein material, probably from the shaft, assayed 0.042 oz gold per ton, indicating that values from the vein can be quite variable. The gold assay values available are too few, too widely spaced, and too erratic to calculate any meaningful resource tonnages for the property. Owing to the narrowness of the vein, only a few tons of gold-bearing material can be inferred; there is no evidence that the vein widens either at depth or along strike.

Lucky Dollar prospect

A shear zone in blocky, coarse-grained granite strikes S. 25° E. and dips 33° NE. at the Lucky Dollar prospect, 1/2 mi southeast of the Golden Eagle Mine (table 1). The main working is a 179-ft adit that explores this zone for 154 ft, then doubles back on a bearing of N. 2° W. for 25 ft along a set of intersecting fractures. Neither alteration nor mineralization is

apparent along either the shear zone or fracture set, and there is no evidence of production. A small pit exposes the surface intersection of the shear zone approximately 40 ft above the adit portal. No other workings were found. A hand-picked dump sample assayed below the 0.005 oz per ton detection limit for gold. No resources are indicated.

Orofino(?) prospects

A highly fractured and iron oxide stained contact zone between quartzite and a felsic dike is explored by a 40- to 50-ft deep inclined shaft at a prospect just north of Big Wash (pl. 1, table 1). About 1,200 ft east, where a pit 10x10x5 ft exposes a highly altered sheared and brecciated zone in chlorite schist, a claim notice for the Orofino No. 3 claim was found, suggesting that all prospect workings in the vicinity are part of a single claim group. Assay values of 0.012 and 0.006 oz gold per ton were obtained from the shaft and pit, respectively. No resources are indicated at either site, and no past production is likely.

Unnamed prospect

A shaft, estimated to be about 20 ft deep, was found at an unnamed prospect in unsurveyed sec. 2, T. 5 S., R. 13 E. (table 1). The shaft is inaccessible, but fragments of bull quartz on the dump indicate that testing a quartz vein in the Pinto Gneiss country rock was the purpose of the shaft. A hand-picked dump sample assayed below the detection limits for gold (table 2, sample 12), and neither production nor resources are indicated.

Storm Jade mine area (Storm Sulphide, Green Giant-Long Green, Little Storm-Jade Mountain)

The south half of the Little Storm-Jade Mountain claim extends into the study area, the north half and the five Storm Sulphide claims which comprise

the rest of the group lie outside (pl. 1). The claims trend in a northwest-southeast direction along a contact zone between limestone and mafic dikes. Alteration along the contact has produced irregular bodies containing mixtures of epidote, garnet, and probably californite, a massive, light-green variety of vesuvianite. The mixture results in a dense, green rock which, during the 1950's, was mined and crushed for use as roofing granules that sold for \$20.00 per ton (Evans, 1960a). Most of the material sold was mined from the Storm Sulphide No. 11 claim, but some production from the north end of the Little Storm-Jade Mountain claim is indicated. Existence of similar material at the south end of the claim and within the study area can only be inferred, as there are no exposures.

During the early 1960's nephrite jade was discovered on the Storm Sulphide No. 2 claim (Evans, 1960b). The amount recovered is unknown, but probably was only a few hundred pounds as the mine workings are not extensive. They consist of a 75-ft-long adit connected to the surface by a short shaft, a 15-ft-long adit, and a few other shallow workings (Evans, 1960b).

Independence prospect

A vertical shaft, estimated to be about 70 ft deep, and a shallow open cut explore S. 58° E. striking, near-vertical shear zones in granite on the Independence No. 1 claim, just north of the study area boundary. Independence No. 2 claim is within the study area. Gold was found in shear zones and small veins on the Independence No. 1 claim (table 2, samples 6-8), but the only workings found lie outside the study area, and there is no evidence that the mineralized structures extend south of the boundary into the Independence No. 2 claim.

Joshua Tree National Monument area

Two unnamed gold prospects in the Joshua Tree National Monument near the western boundary of the study area were found and sampled, one in sec. 13, T. 5 S., R. 12 E., the other in sec 36, T. 3 S., R. 12 E. (pl. 1, table 1).

A 20 ft shaft in sec. 13 explores a N. 20° E. striking, 65° E. dipping shear zone in granite (table 2, sample 9-11).

At the prospect in sec. 36, a 30-ft-long open cut exposes a mineralized zone along a contact between an andesite porphyry dike and Pinto Gneiss. Gold was present in two samples (table 2, samples 2 and 3), but none of the mineralized structures appears to project into the study area.

Eagle Mountain Mine area

More than 99.9 percent of the mineral values from the Eagle Mountain mining district has come from Kaiser Steel Corporation's Eagle Mountain Mine (Bureau of Land Management, 1982). Nearly all of the remainder was produced from the Black Eagle, Iron Chief, and Rainbows End Mines, and a few other nearby properties. All are north of the wilderness study area boundary (pl. 1).

A total district metal-production of 215 million long tons iron, 7,257 oz gold, 14,768 oz silver, 1.48 million lbs lead, and 114,424 lbs copper is reported (Bureau of Land Management, 1982).

The gold and base-metal deposits occur either as replacements along limestone-granite contacts or in fissure veins in either granite or metamorphic rocks (Clark, 1970, p. 157-158).

Eagle Mountain Mine

The iron deposits at the Eagle Mountain Mine were first claimed in the early 1890's, acquired by the Southern Pacific Railroad in 1908, and purchased by Kaiser Steel Corporation in 1944 (Dubois and Brummett, 1968, p. 1595).

Mining began in 1948, and production continued until October 1982, when mining and processing activities ended. In late 1982, the Kaiser Steel Corporation announced the permanent closing of the property (Pay Dirt, 1983).

Iron ore occurs as bedded replacement deposits of magnetite and hematite in two main zones, 150 ft and 60 ft thick, respectively, in the north limb of a northwest-bearing anticline composed of probable Paleozoic age meta-sediments (Dubois and Brummett, 1968, p. 1593). Huseman (1953, p. 82) stated that the anticline top and its south limb are completely missing except for a small portion of the top on the south orebody. Both the south orebody and the north-limb beds dipping northward are exposed in the main pit at the mine. As the pit lies about 3 mi northeast of the study area boundary, it is apparent that no extensions of the known iron deposits occur in the study area.

Black Eagle Mine

Now owned by Kaiser Steel Corporation, the Black Eagle Mine was the chief producer of silver and lead in the district, operating intermittently from the time it was located in 1898 until shut down in December 1940 (Evans, 1960d). Tucker and Sampson (1945, p. 147) estimated that the mine produced \$200,000 in metal values, chiefly in lead and silver, but also some copper. Ore was mined from a 4- to 10-ft-wide quartz vein along a quartzite-diorite contact (table 1). There is no known extension of the mineralized vein into the study area.

Iron Chief Mine

Evans (1960e), citing Tucker and Sampson (1929), reported a total production of \$150,000 in metal values from the Iron Chief Mine, mostly gold, though some copper may also have been recovered. Located in the 1890's, the

property had various owners and periods of production until acquired by Kaiser Steel Corporation (Evans, 1960e). Ore was produced from a contact zone between limestone and quartz monzonite which averaged 6 ft in width (Evans, 1960e). The N. 70° W.-trending ore zone does not project into the study area.

Rainbows End Mine (Annie Laurie, Nancy)

The amount of metals produced from the Rainbows End Mine is unknown, but some copper, gold, and silver production is likely. Most of the mine workings are on a patented claim now owned by Kaiser Steel Corporation. Eight surrounding unpatented claims are also owned by Kaiser, and the group lies a short distance north of the study area boundary (pl. 1). Samples containing values in copper, gold, and silver (table 2, samples 4 and 5) were taken from the surface exposure of the main vein and from the dump. The vein strikes north on a granite-diorite contact, and dips 70°-75° W. Two shafts and several small prospects explore the vein, but much of the surrounding area has been disturbed by drill site construction, making detailed observations difficult. No information was available concerning the results of the drilling program. A 2,000 ft southward projection of the vein would extend into the study area; however, the vein could be followed only a short distance south before it disappeared under alluvium.

CONCLUSIONS

Geologic features that localized the productive deposits of iron, gold, lead-silver, and copper in the Eagle Mountain mining district appear to be absent within the study area.

Gold occurs in shears and quartz veins in granite or metasediments at several prospects in and near the area, but all are narrow and nonpersistent,

contain erratically distributed metal values, and usually lack a history of production. Similar undiscovered deposits probably occur within the area.

Material suitable for use as roofing granules may occur in a small locale in the northern part of the study area, within the southern half of the Little Storm-Jade Mountain claim. None is exposed, however, and the bulk of this resource lies outside the study area at the sites from which it was originally produced.

No occurrences of energy minerals or fuels, including geothermal resources, are known within the area.

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Table 1.--Mineral deposits in and near the Eagle Mountains Wilderness Study Area,
Riverside County, California

<u>Mine or prospect</u> <u>Name and location</u>	<u>Mineral or</u> <u>commodity</u> <u>and grade</u>	<u>Host rock and other geologic</u> <u>features controlling</u> <u>mineralization</u>	<u>Development and</u> <u>production</u>	<u>Reference</u>
Golden Eagle Mine SE1/4 sec. 23, T. 5 S., R. 13 E. (unsurveyed), samples 24-29.	Gold, 0.036- 0.236 oz/ton.	Quartz veins in N. 40°-70° E. shear zones in coarse gray (Mesozoic?) granite, dip 40°-50° SE.	Numerous small workings, caved inclined shaft, 50 ft deep (est.), 50-ft-long adit with stope 20x20x3 ft; recorded production was 1 oz gold from 1 ton ore in 1941.	Saul (1959).
Shooting Star No. 1 prospect SE1/4 sec. 12, NE1/4 sec. 13, T. 5 S., R. 13 E., samples 15-23.	Gold, 0.026- 1.034 oz/ton, silver, 0.040 oz/ton.	Vein, 0.1- to 0.3-ft wide, strikes north, dips vertically, in coarse-grained gray granite; can be traced for about 50 ft, perhaps as much as 300 ft.	Vertical shaft, 25 ft deep; open cut, 30 ft long; caved adit, pits, trenches; production unknown, probably small if any.	None.
Lucky Dollar prospect SW1/4 sec. 24, T. 5 S., R. 13 E., sample 30.	Gold(?), no values detected.	Shear zone in blocky, coarse- grained gray granite, strikes S. 25° E., dips 33° NE.	Adit, 179 ft long; small pit; production unknown, none likely.	Campbell (1968).
Orofino(?) prospects SW1/4 sec. 36, T. 4 S., R. 13 E., samples 13 and 14.	Gold, 0.006- 0.012 oz/ton.	Highly fractured contact zone between felsic dike and quartzite; also a sheared and brecciated zone in chlorite schist.	Inclined shaft, 50 ft deep; two open cuts, 10 ft and 15 ft long; production unknown, none likely.	None.

Table 1.--Mineral deposits in and near the Eagle Mountains Wilderness Study Area,
Riverside County, California--Continued

<u>Mine or prospect</u> <u>Name and location</u>	<u>Mineral or</u> <u>commodity</u> <u>and grade</u>	<u>Host rock and other geologic</u> <u>features controlling</u> <u>mineralization</u>	<u>Development and</u> <u>production</u>	<u>Reference</u>
Unnamed prospect SW1/4 sec. 2, T. 5 S., R. 13 E. (unsurveyed), sample 12.	Gold(?), no values detected.	Bull quartz veins or masses in Pinto Gneiss; float only no exposures.	Vertical shaft, 20 ft deep (est.); production unknown, probably none.	None.
Storm Jade Mine (Storm Sulphide, Green Giant-Long Green, Little Storm-Jade Mountain), secs. 32-33, T. 3 S., R. 13 E., sec. 4, T. 4 S., R. 13 E.	Crushed rock, \$20/ton. Jade (nephrite), unit value unknown.	Contact zone between mafic dikes and limestone. Width variable (few 10's of feet).	Open cut, 40x60 ft; adit, 75 ft long; other small workings over a six- claim area; production unknown.	Evans (1960a, b).
Independence prospect SE1/4 sec. 9, and NE1/4 sec. 16, T. 4 S., R. 14 E., samples 6-8.	Gold, 0.022- 0.051 oz/ton.	Shear zones in coarse-grained biotite granite, 1.5 ft to 3 ft wide; strike S. 58° E., dip near vertical.	Vertical shaft, 70 ft deep (est.), shallow open cut; production unknown, small if any.	None.
Unnamed prospect NE1/4 sec. 13, T. 5 S., R. 12 E., samples 9-11.	Gold, 0.316- 0.366 oz/ton.	Shear zone containing narrow veins, strikes N. 20° E., dips 65° E., in granite; traceable for about 200 ft along surface.	Vertical shaft, 20 ft deep (est.), small open cut; production unknown, probably small if any.	None.

Table 1.--Mineral deposits in and near the Eagle Mountains Wilderness Study Area,
Riverside County, California--Continued

<u>Mine or prospect</u> <u>Name and location</u>	<u>Mineral or</u> <u>commodity</u> <u>and grade</u>	<u>Host rock and other geologic</u> <u>features controlling</u> <u>mineralization</u>	<u>Development and</u> <u>production</u>	<u>Reference</u>
Unnamed prospect SE1/4 sec. 36, T. 3 S., R. 12 E. (unsurveyed), samples 1-3.	Gold, 0.025- 0.434 oz/ton.	Sheared contact zone between aplite and hornblende andesite porphyry dike in Pinto Gneiss.	Open cut, 30 ft long; production unknown, probably none.	None.
Eagle Mountain Mine secs. 28-30, 34-36, T. 3 S., R. 14 E. (unsurveyed).	Iron, 30-65 percent.	Bedded replacement deposits of magnetite and hematite occur in two main zones averaging about 150 ft and 60 ft thick; ore is confined to the north limb of a northwest-trending anticline composed of probable Paleozoic age metasediments, and is exposed for more than 5 mi.	Two open pits, about 5 mi apart; total production exceeds 215 million long tons.	Bureau of Land Management Final Envi- ronmental Statement for C.D.C.A. (1982); Dubois and Brummett (1968); Evans (1960c); Huseman (1953).
Black Eagle Mine NE1/4 sec. 30, T. 3 S., R. 14 E. (unsurveyed).	Lead, silver, copper, grade unknown.	Quartz vein in fault contact between quartzite and dio- rite, 4 to 10 ft wide, strikes N. 70° W., dips 85° N.; 3,000 ft surface exposure.	Vertical shaft, 650 ft deep, more than 3,000 ft of workings on various levels; estimated total production, \$200,000.	Bureau of Land Management Final Envi- ronmental Statement for C.D.C.A. (1982); Evans (1960d); Saul and others (1961); Tucker and Sampson (1945).

Table 1.--Mineral deposits in and near the Eagle Mountains Wilderness Study Area,
Riverside County, California--Continued

<u>Mine or prospect</u> <u>Name and location</u>	<u>Mineral or</u> <u>commodity</u> <u>and grade</u>	<u>Host rock and other geologic</u> <u>features controlling</u> <u>mineralization</u>	<u>Development and</u> <u>production</u>	<u>Reference</u>
Iron Chief Mine NW1/4 sec. 36, T. 3 S., R. 13 E.	Gold, reported \$10/ton average.	Replacement zone along a limestone-quartz monzonite contact; heavy iron gossan above 140-ft level, sulfide zone with pyrite-chalcopryrite below.	Vertical shaft, 140 ft deep, 500 ft crosscut and 500 ft drift on the 100 ft level, 300 ft of drift stoped to surface; reported production, \$150,000.	Clark (1970); Tucker and Sampson (1945).
Rainbows End Mine (Annie Laurie, Nancy) NE1/4 sec. 3, T. 4 S., R. 13 E., samples 4 and 5.	Reported copper grade, 4-7 percent. Reported gold and silver values, \$8/ton. 2.0 percent copper, 0-0.426 oz/ton gold, 0-0.4 oz/ton silver detected in samples.	Vein, 1 to 4 ft wide, strikes north, dips 70°-75° W. on granite-diorite contact.	Two vertical shafts, depth and extent of underground workings unknown, various small surface workings; production unknown, probably small.	Evans (1960f); Tucker and Sampson (1945).

Table 2.--Sample and assay data summary

[Pan. con., panned concentrate; St. sed., stream sediment; NA, not applicable; ---, not detected (detection limits, gold--0.005 oz/ton, silver--0.2 oz/ton)]

No.	Sample Type	Width	Locality	Assay data		
				Au oz/ton	Ag	Other percent
PROSPECTS NEAR NORTHWEST CORNER OF STUDY AREA, IN JOSHUA TREE NATIONAL MONUMENT						
1	Chip	2.0 ft	Open cut	---	---	---
2	do.	1.0 ft	do.	0.025	---	---
3	Grab	NA	Dump	.434	---	---
RAINBOWS END MINE						
4	Chip	1.0 ft	Shaft collar	.426	0.4	---
5	Grab	NA	Dump	---	---	2.0 Cu
INDEPENDENCE PROSPECT						
6	Chip	3.0 ft	Shaft collar	.022	---	---
7	do.	1.5 ft	Outcrop	---	---	---
8	do.	1.0 ft	Open cut	.051	---	---
PROSPECTS 1.5 MILES WEST OF THE STUDY AREA, IN JOSHUA TREE NATIONAL MONUMENT						
9	Grab	NA	Dump	.316	---	---
10	Chip	4.0 ft	Open cut	---	---	---
11	do.	3.0 ft	Outcrop	.366	---	---
UNNAMED PROSPECT IN UNSURVEYED SEC. 2, T. 5 S., R. 13 E.						
12	Grab	NA	Dump	---	---	---
OROFINO(?) PROSPECTS						
13	Chip	2.0 ft	Shaft collar	.012	---	---
14	do.	3.0 ft	Pit	.006	---	---
SHOOTING STAR NO. 1 PROSPECT						
15	do.	.16 ft	Shaft collar	1.034	---	---
16	do.	.75 ft	Open cut	.068	---	---

Table 2--Sample and assay data summary--Continued

No.	Sample Type	Width	Location	Assay data		
				Au oz/ton	Ag	Other percent
SHOOTING STAR NO. 1 PROSPECT--Continued						
17	Grab	NA	Stockpile	0.042	---	---
18	Chip	4.0 ft	Outcrop	.026	---	---
19	do.	.5 ft	Shaft collar	.118	---	---
20	do.	NA	Vein material	.926	0.4	---
21	do.	4.2 ft	Open cut	---	---	---
22	do.	.75 ft	do.	---	---	---
23	do.	3.0 ft	do.	---	---	---
GOLDEN EAGLE MINE						
24	Chip	1.25 ft	Stope	.036	---	---
25	do.	1.0 ft	Adit	---	---	---
26	do.	1.0 ft	Stope	.236	---	---
27	do.	2.0 ft	Adit	.138	---	---
28	do.	.25 ft	Outcrop	---	---	---
29	do.	1.2 ft	Adit	---	---	---
LUCKY DOLLAR PROSPECT						
30	Grab	NA	Dump	---	---	---
SAMPLES FROM SOUTHEAST CORNER OF STUDY AREA						
31	Pan. con.	NA	St. sed.	---	---	---
32	do.	NA	do.	---	---	---
33	Grab	NA	Outcrop	---	---	---

EXPLANATION OF SYMBOLS FOR MINE AND PROSPECT MAP

 APPROXIMATE BOUNDARY OF EAGLE MOUNTAINS WILDERNESS STUDY AREA

 UNPATENTED MINING CLAIMS

○³³ LOCALITY OF SAMPLED OUTCROP — showing sample number

●³¹ LOCALITY OF PANNED CONCENTRATE SAMPLE — showing sample number

SURFACE OPENINGS — showing sample locality number; symbol may represent more than one working

■¹³ SHAFT

└³⁰ ADIT

×¹⁴ PROSPECT PIT

 OPEN PIT MINE